

Abstract of the Disclosure

Among the different intrastrand quadruplex structures that can arise from duplex DNA, it has been discovered that the nucleotide sequences (GGA)<sub>4</sub> and (GGA)<sub>3</sub>GG form biologically significant quadruplex structures. Thus, provided herein are methods for identifying molecules that modulate the biological activity of quadruplex DNA comprising the nucleotide sequence (GGA)<sub>4</sub> or the nucleotide sequence (GGA)<sub>3</sub>GG, and specifically, methods for identifying molecules that bind such quadruplexes. Also provided herein are methods for modulating the biological activity of a biologically significant native quadruplex DNA with a molecule identified by the methods described herein.